REMARKS

Claims 1-11, 13 and 15-30 are rejected. Claim 4 has been amended to remove objectionable language. Claims 1-11, 13, and 15-30 are presently pending in the application. Favorable reconsideration of the application in view of the following remarks is respectfully requested.

Rejection of Claims 1-29 under 35 USC § 112:

The Examiner has rejected Claim 4 under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention, indicating that Claim 4 contains the language "such as ...". Claim 4 has been amended to remove this language.

Rejection Of Claim 1-3, 5-11, 13, 15-30 Under 35 U.S.C. §103(a):

The Examiner has rejected Claims 1-3, 5-11, 13, 15-30 35 U.S.C. 103(a) as being unpatentable over the combination of Christian et al (US Patent No. 6,060,230) and Beall et al (US Patent 5,552,469), as Christian et al discloses an electrically conductive layer containing intercalate inside or exfoliate the smectite particle wherein the electrically conductive layer has a dry thickness of 0.01 to 2 g/m^2, and the size of particle is from 0.005 micron to 0.05 micron; the polymeric binder that are capable of sufficiently intercalating inside or exfoliating smectite particles including water soluble polymer including hydrophilic colloid such as gelatin, the basal spacing of 50 % or more as the clay to binder weight ratio changed from 100:0 to 30:70, the support, and the 8.3 weight % of clay. The Examiner notes that, although Christian et al fails to disclose the size of the Smectite particle having aspect ratio of 20:1 to 500:1, Beall et al disclose the platelets have an aspect ratio of about 200 to 2,000 and, therefore, it would have been obvious to the worker of ordinary skill in the art at the time the invention was made to use the swellable clay within having size taught in Beall et al with an expectation of achieving a material exhibiting excellent dry and wet adhesion, and thereby provide a material and process as claimed.

Christian discloses an imaging element, which includes a support, an image-forming layer superposed on the support, a transparent magnetic recording layer superposed on the support; and an electrically-conductive layer superposed on the support. The transparent magnetic recording layer is composed of magnetic particles dispersed in a first film-forming polymeric binder. The

electrically- conductive layer includes electrically-conductive metal-containing colloidal particles, swellable, smectite clay particles, a first polymeric binder which can sufficiently intercalate inside or exfoliate the smectite clay particles and a second film-forming polymeric binder, wherein the electrically-conductive metal-containing particles and the polymer-intercalated or polymer-exfoliated smectite clay particles are dispersed for use in photographic and thermally-processable imaging elements.

Beall relates to exfoliated layered silicate material derived from intercalates formed by contacting the layer material, e.g., a phyllosilicate, with an intercalant polymer to sorb or intercalate the polymer between adjacent platelets of the layered material, so that the intercalate easily can be exfoliated to provide a matrix polymer/platelet nanocomposite material useful wherever polymer/filler composite materials are used, for example, as external body parts for the automotive industry; heat-resistant polymeric automotive parts in contact with an engine block; tire cord for radial tires; food wrap having improved gas impermeability; electrical components; food grade drink containers; and any other use where it is desired to alter one or more physical properties of a matrix polymer, such as elasticity and temperature characteristics, e.g., glass transition temperature and high temperature resistance.

The present invention relates to imaging elements having improved mechanical properties as a result of incorporation of a layered material layer or a natural clay-containing layer. These imaging elements are characterized by a support, an imaging layer, and at least one layer comprising a clay nanocomposite wherein said nanocomposite comprises a splayant and at least one layered material natural clay particle having an aspect ratio of from 100:1 to 400:1 and a length greater than 0 and less than or equal to 700 nm (0.7μm).

To establish a prima facia case of obviousness requires, first, there must be some suggestion or motivation, either in the references themselves, or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art references (or references when combines) must teach or suggest all the claim limitations.

As indicated by the Examiner, Christian discloses no aspect ratio of clay. Christian also fails to teach or disclose the length of the layered material,

and fails to mention the benefits of cationic exchange capacity, humidity expansion, and curl obtained with the selection of the present claims. Beall fails to mention the particular aspect ratio presently claimed in combination with a particular length and also fails to teach or disclose the use of the intercalated layered materials in imaging elements to achieve properties critical to the acceptability of the element, particularly the properties of cationic exchange capacity, humidity expansion, and curl. There is no motivation in either reference to select the particularly claimed layered material to produce an imaging element.

The Examiner indicates that, although the aspect ratio may not be stated in Christian, due to the similarity of the size of the disclosed particles thereof, the clay particle claimed in the present claimed invention and taught in Christian et al would inherently have similar size. As noted by the Examiner, Christian discloses a clay particle having particle size of 0.002 to 0.050 micron. However, Christian also indicates that synthetic hectorite clay particles have an average platelet size of about 0.025 μm in diameter and about 0.001 μm in thickness. See col. 8, lines 20-21, col. 19, lines 64-65, col. 20, lines 48-49, col. 21, lines 20-22, and col. 22, lines 37-38. The aspect ratio, a term known to those of skill in the art (see Beall, col. 6, line 10 and Christian, col. 14, line 4), is defined as "the ratio of the largest and smallest dimension of the layered material". See pg. 6, lines 20-21 of the specification as originally filed. Therefore, the aspect ratio of the particles of Christian vary from 2:1-50:1 (0.002 micron diameter / 0.001 thickness; 0.050 micron diameter / 0.001 thickness micron), which clearly falls outside of the range of 100:1-400:1 of the present claims, which would be obvious to one of ordinary skill in the art.

Both references also disclose a broad range of layered materials. Given the broad range of materials, the references provide no likelihood that the specific selection of the present claims would produce an imaging element having improved cationic exchange capacity, humidity expansion, and curl. The references simply provide a list of materials to try with no improvement goal in mind. Christian and Beall fail to mention the specific problems related to curl, cationic exchange capacity and humidity expansion, providing no motivation to make the presently claimed selection. Although Christian and Beall generally refer to layered materials that include the materials of the invention, there is no disclosure that the subset presently claimed would have any special properties not

demonstrated by the broader range of materials disclosed in Christian. Beall fails to disclose the use in imaging elements. Therefore, Christian and Beall provide no likelihood of success relating to the presently claimed materials as imaging elements.

Finally, neither reference discloses all the limitations of the present claims, that is, a clay nanocomposite wherein said nanocomposite comprises a splayant and at least one layered material natural clay particle having an aspect ratio of from 100:1 to 400:1 and a length greater than 0 and less than or equal to 700 nm (0.7μm).

In addition, the claimed subset of layered clay materials provides surprising results over the materials of Christian and Beall. Christian discloses Laponite materials (see col. 8, lines 2, 7, 22, and 36, col.9, lines 22, 32, and 38, the Table in col. 18 (Examples 1-5), the Table in col. 19 (comparative Examples 1-5) as well as lines 47-48, the Table in col. 21 (Examples 6-9), and col. 24, line 42). The present examples (pg. 26, line 14 – pg. 27, line 6, Tables 1 and 2) utilize laponite as a control example. The Laponite materials of Christian and the control examples of the present invention are the same material. The Cloisite materials of the present invention, having an aspect ration of 200:1 (Table 1, pg. 26), provide improved results as compared to the Laponite material, having an aspect ratio of 20-30:1 (Table 1, pg. 26), with respect to cationic exchange capacity (Table 1, pg. 26), humidity expansion (Table 2, pg. 28), and humidity curl (Table 3, pg. 29).

Beall and Christian, which both refer to hectorite (Laponite) and montmorillonite (Cloisite) as acceptable layered materials, fail to mention the surprising improvement with respect to improved humidity expansion (Table 2 on pg. 28: compare Examples 2-4 (inventive) with a humidity expansion coefficient of less than about 300 to Comparative Example 2, with a humidity expansion coefficient of about 379), and curl (Table 3 on pg. 29: compare Example 5 (inventive) with 0 ANSI curl regardless of humidity to Comparative Example 4 with 40-55 ANSI curl, depending on humidity) achieved when the presently claimed selection of materials are used.

Rejection Of Claim 4 Under 35 U.S.C. §103(a):

The Examiner has rejected Claim 4 under 35 U.S.C. 103(a) as being unpatentable over Christian et al (US Patent No. 6,060,230) and Beall et al (US Patent 5,552,469) in view of the Applicants' disclosure on page 11 second

paragraph or Taylor et al (US Patent No. 5,800,977), indicating that the hardening agents for hydrophilic colloid has been known in the art such as disclosed in the present specification disclosure and Taylor et al and, therefore, it would have been obvious to the worker of ordinary skill in the art at the time the invention was made to use a hardener known in the art such as disclosed in the applicants' disclosure or Taylor et al to increase the hardening rate of hydrophilic colloid taught in Christian et al, and thereby provide an invention as claimed.

Claim 4 benefits, ultimately, from dependence on Claim 1, which, as discussed immediately above, the Applicants believe is nonobvious over Christian and Beall. The addition of Taylor to the combination of references Beall and Christian discussed immediately above would only provide the additional element of a hardener in combination with the layer, not as a splayant as presently claimed. Therefore the combination of Taylor, Beall and Christian also fails to make the present claims obvious.

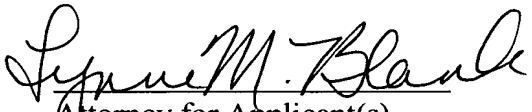
Double Patenting:

The Examiner has provisionally rejected Claims 1-11, 13, 15-30 under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-5, 9-11, 13-23 of copending Application No. 10/633,806.

Section 804 of the MPEP states "*A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b). Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).*" Such a terminal disclaimer is attached. See also the previous amendment dated February 8, 2005, which indicates the updated status of the commonly assigned, co-pending Application No. 10/633,806.

It is believed that the foregoing is a complete response to the Office Action and that the claims are in condition for allowance. Favorable reconsideration and early passage to issue is therefore earnestly solicited.

Respectfully submitted,



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If the Examiner is unable to reach the Applicant(s) Attorney at the telephone number provided, the Examiner is requested to communicate with Eastman Kodak Company Patent Operations at (585) 477-4656.